

# HALLIBURTON

iCem<sup>®</sup> Service

## **NOBLE ENERGY INC-EBUS**

**Beebe Draw Federal H15-725 Production**

Job Date: Tuesday, June 25, 2024

Sincerely,  
**Chris Yeung**

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Beebe Draw Federal H15-725 - Production**. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Job was pumped per design with an average cement density of 13.15 ppg at 6.98 bbl/min. Cement was displaced with 20 bbl. of treated water with retarder and 294 bbl. of treated freshwater displacement. Plug was landed at 2,360 psi and bumped to 3,000 psi. Pressure was held for 30 min casing test. With 75 bbls of spacer returning to surface, the estimated TOC is 935'.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

**Halliburton Rockies Cement Team**

## 1.2 Job Overview

Job Details	
API #:	05-123-49230
City, County:	GILCREST/WELD
SO#:	909424345

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	6/25/24	14:00
Called Out Time:	6/25/24	7:00
Arrived On Location:	6/25/24	12:45
Job Started:	6/25/24	18:45
Job Completed:	6/25/24	22:00
Departed Location:	6/25/24	23:15

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	90
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	10.2
4	Casing set depth (shoe)	ft	13542
5	TVD	ft	6978
6	Float collar depth	ft	13522
7	Length of rate hole	ft	10
8	Previous casing shoe depth	ft	1929
9	Pre-job mud circulation time	hh:mm	1:30

10	Pre-job mud circulation rate	bpm	10
11	Pre-job mud circulation volume	bbls	900
12	Mud circulation pressure at start of cement	psi	1045
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	Y
15	Calculated displacement	bbls	314
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	SPACER/75 BBLS
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2360 PSI @ 2
20	Number of Centralizers	-	
21	Number of bottom plugs	-	2
22	Number of trucks used preparing/during job	-	3
23	Add hours? If Yes, put #	Y/N and hours	N
24	NPT? If Yes, put #	Y/N and hours	N

### 1.3 Water Field Test

	Recorded Value	Unit	Acceptable Limit	Potential Problems if Values Exceed the Limit
<b>pH</b>	6		6.0 - 8.0	Chemicals in water can cause severe retardation
<b>Temperature</b>	60	F	60 - 80 F	Can can pre-mature setting of cement
<b>Chlorides</b>	0	ppm	3000 ppm	Can shorten thickening time

### 1.4 Actual Pump Schedule

#### Stage 1

	Density (ppg)	Volume (bbls)	Yield (ft <sup>3</sup> /sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
<b>Spacer Fluid</b>	12	120	2.24	13.65	301	4116
<b>Cap Cement</b>	13.2	39.6	1.59	7.98	140	1117
<b>Lead Cement</b>	13.2	244	1.68	7.92	815	6468
<b>Tail Cement</b>	13.2	223	1.99	9.51	630	6006
<b>Top Plug</b>						
<b>Displacement Fluid</b>	8.4	314				

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Summit Crew Notified Date/Time	6/25/2024	07:00:04	Crew called out for CHEVRON Production TRUE 41
2	Pre-Convoy Safety Meeting	6/25/2024	10:45:09	Discussed route and possible hazards
3	Depart Location for Service Center or Other Site	6/25/2024	11:00:09	Depart yard w/ 1 pump, 2 660, 1 pickups and 4 personnel.
4	Arrive at Location from Service Center	6/25/2024	12:45:10	Requested on location @ 1400
5	Safety Meeting - Assessment of Location	6/25/2024	12:55:11	Discussed location and possible hazards. Water test: Temp - 60, Chlorides - 0, PH - 6, Sulfates - <200. 8 1/2 TD @ 13552'. Production casing set @ 13542'. 5.5" 17# P110 - ST - 20' .0232 bbl/ft. CSG/OH - .0408 bbl/ft. CSG/CSG - .0479 bbl/ft 9 5/8" 36# J55 set @ 1929'. Mud Weight - 10.2 ppg
6	Safety Meeting - Pre Rig-Up	6/25/2024	13:05:19	Discussed rig up and possible hazards.
7	Rig-up Lines	6/25/2024	13:15:20	Rig up equipment
8	Casing on Bottom	6/25/2024	16:15:07	
9	Circulate Well	6/25/2024	16:45:09	Rig circulating well 10 bpm @ 1045 psi

10	Safety Meeting - Pre Job	6/25/2024	18:26:25	Discussed job and possible hazards with everyone on location.
11	Start Job	6/25/2024	18:39:03	
12	Drop Bottom Plug	6/25/2024	18:40:32	
13	Pump Spacer 1	6/25/2024	18:41:26	Pumped 3 bbls of FW
14	Pressure Test	6/25/2024	18:45:08	Test lines to 6500 psi
15	Pump Spacer 1	6/25/2024	18:54:33	Pumped 120 bbls of 12 ppg of Tuned Spacer. 2.24 cuft/sk and 13.65 gal/sk. Verified weight with pressurized mud scales.
16	Check Weight	6/25/2024	19:06:31	
17	Drop Bottom Plug	6/25/2024	19:26:08	
18	Pump Lead Cement	6/25/2024	19:30:35	Pumped 39.6 bbls of 13.2 ppg Elasticem. 140 sks, 1.59 cuft/sk, and 7.98 gal/sk. Verified weight with pressurized mud scales. Estimated TOC @ 935.28'
19	Check Weight	6/25/2024	19:36:15	
20	Pump Lead Cement	6/25/2024	19:39:42	Pumped 244 bbls of 13.2 ppg Isobond cmt. 815 sks, 1.68 cuft/sk, and 7.92 gal/sk. Verified weight with pressurized mud scales. Estimated TOC @ 1762'
21	Check Weight	6/25/2024	19:42:06	
22	Check Weight	6/25/2024	19:46:41	
23	Check Weight	6/25/2024	19:58:05	
24	Check Weight	6/25/2024	20:03:13	
25	Pump Tail Cement	6/25/2024	20:14:43	Pumped 223 bbls of 13.2 ppg Elasticem. 630 sks, 1.99 cuft/sk, and 9.51 gal/sk. Verified weight with pressurized mud scales. Estimated TOC @ 7708.66.' BOC @ 13174.35'
26	Clean Lines	6/25/2024	20:46:52	Flush lines w/ 10 bbls
27	Drop Top Plug	6/25/2024	21:01:04	3rd party rupture plug

28	Pump Displacement	6/25/2024	21:02:04	Pumped 314 bbls of displacement. First 20 bbl w/ MMCR and 294 bblsw/ MX 820-6 & BELLACIDE
29	Bump Plug	6/25/2024	21:42:52	Bump plug from 2360 - 3000 psi
30	Bump Plug	6/25/2024	21:47:14	Bump plug to rupture. Plug ruptured @ 4400 psi. Pumped 5 bbls and shutdown.
31	Check Floats	6/25/2024	21:51:55	Floats are good. Got 3.5 bbls back. Rig starting 30 minute inflow test.
32	End Job	6/25/2024	21:52:56	Got 75 bbls of spacer back to surface.
33	Pre-Rig Down Safety Meeting	6/25/2024	22:00:56	
34	Rig-Down Equipment	6/25/2024	22:15:01	
35	Depart Location Safety Meeting	6/25/2024	23:00:02	
36	Depart Location	6/25/2024	23:15:03	Thank you for using Halliburton cement. Andrew Glover and crew.

3.0 Attachments

3.1 True 41 - Noble Beebe Draw Federal H15-725 Production.png

